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CLAIMS

1.   A raster image processing method for processing content into an output data acceptable for rendering by an output engine included in an output device, the output data corresponding to data content accessible at least partly from an information apparatus, the method comprising:

rasterizing at the information apparatus at least part of the content into one or more output images with at least one rasterization parameter associated with the output device;

generating at the information apparatus an intermediate output data for rendering of the data content at the output device, the intermediate output data including said one or more output images;

transmitting the intermediate output data from the information apparatus for rendering at the output device;

performing at least one image processing operation, at an output controller that is distinct from the information apparatus and associated with the output device, on said one or more output images included in the intermediate output data; and

conforming at the output controller the intermediate output data into the output data acceptable for rendering by the output engine.

2.   The method of claim 1 comprising rasterizing at least part of the content into said one or more output images with rasterization parameters that include one or more of resolution, color space, output size, and bit depth.

3.   The method of claim 1 comprising encoding said one or more images with mixed raster content encoding.

4.   The method of claim 1 comprising transmitting the intermediate output data by wireless communication.

5.   The method of claim 1 comprising performing at least one image processing operation, on the one or more output images that includes one or more of a color correction operation, a color matching operation, a color management operation, a scaling operation, an interpolation operation, a color space conversion, and a halftoning operation.

6.   The method of claim 1 comprising conforming the intermediate output data by performing one or more of compression, decompression, segmentation, de-segmentation, storing, and retrieving.

7.   A raster image processing method for processing content into a print data acceptable for rendering by a printer engine included in a printing device, the printing device including a printer controller, the print data corresponding to content accessible at least partly from an information apparatus, the method comprising:

rasterizing at the information apparatus at least part of the content into one or more output images with at least one rasterization parameter;

generating at the information apparatus an intermediate output data that includes the one or more output images;

transmitting at the information apparatus the intermediate output data from the information apparatus to a processor distinct from the information apparatus and associated with the printing device;

converting at the processor the intermediate output data into a print data acceptable to the printer controller, and

raster image processing at the printer controller the print data for rendering by the printer engine.

8.   The method of claim 7 comprising rasterizing at least part of the content with rasterization parameters including one or more of resolution, color space, output size, bit depth, and rendering intent.

9.   The method of claim 7 comprising encoding the one or more images with mixed raster content encoding.

10.   The method of claim 7 comprising transmitting the intermediate output data by wireless communication.

11.   The method of claim 7 further comprising interpreting the intermediate output data and retrieving the one or more output images.

12.   The method of claim 11 further comprising one or more operations on the one or more output images that include one or

more of compression, decompression, segmentation, de-segmentation, storing, retrieving, color correction, color management, scaling, interpolation, color space conversion, and decryption.

13. The method of claim 7 in which the converting of the intermediate output data includes embedding the one or more output image information into the print data.

14. A method of processing content, comprising:
creating raster data by rasterizing at least part of the content;
creating one or more images with at least two raster-form layers for storing segmented information associated with at least part of the content;
storing at least part of the raster data into the at least two raster-form layers according to the segmented information; and
transmitting an output data that includes said one or more images by local short range communication to an output device or system for rendering.

15. The method of claim 14 comprising creating raster data by rasterizing content that includes at least part of a text or graphics information.

16. The method of claim 14 comprising creating one or more images with each raster-form layer including one or more image attributes that differentiate it from other layers, the one or more attributes including one or more of resolution, color space, output size, bit depth, and compression method, digital watermark, and rendering intent.

17. The method of claim 14 comprising creating one or more images with at least two raster-form layers for storing segmented information that includes an association with one or more of a background and a foreground, and a luminance and a chrominance.

18. The method of claim 14 comprising creating one or more images with at least two raster-form layers for storing segmented information that includes an association with one or more of a text, a graphics, an image, a video, and an audio.

19. The method of claim 14 comprising creating one or more images with at least two raster-form layers, and at least one a selector layer.

20. The method of claim 15 further comprising one or more operations on one or more of the raster-form layers that include one or more of compression, decompression, segmentation, de-segmentation, storing, retrieving, color correction, color management, scaling, interpolation, color space conversion, encryption, digital watermarking, and halftoning.

21. The method of claim 14 comprising transmitting the output data by short-range wireless communication.

22. A raster image processor for processing content, comprising:
means for creating raster data by rasterizing at least part of the content,
mean for creating one or more images with at least two raster-form layers for storing segmented information associated with at least part of the content,
means for storing at least part of the raster data into the at least two raster-form layer according to the segmented information, and
means for passing said one or more images for delivery to an output device or system.

23. The processor of claim 22 in which the content includes text or graphics information.

24. The processor of claim 22 wherein the means for creating one or more images creates raster-form layers that each include one or more image attributes that differentiate it from other layers, the one or more attributes including one or more of resolution, color space, output size, resolution, bit depth, compression method, digital watermark, and rendering intent.

25. The processor of claim 23 further comprising means for performing one or more operations on one or more of the raster-form layers, said one or more operations including one or more of compression, decompression, segmentation, de-segmentation, storing, retrieving, color correction, color management, scaling,

interpolation, color space conversion, encryption, digital watermarking, and halftoning.

26. The processor of claim 22 further comprising means for delivering the one or more images to an output device or system with short-range wireless communication.

27. The method of claim 22 in which the output device or system includes printing device.

28. A raster image processing method for processing content into output data acceptable for rendering by an output engine included in an output device, the output data corresponding to content accessible at least partly from an information apparatus, the method comprising:

rasterizing at the information apparatus at least part of the content into an output image with at least two raster-form data layers and a selector mask layer, each raster-form data layer being associated with a segmentation type associated to an attribute related to information contained in the data content;

performing at least one image processing operation, at a processor distinct from the information apparatus and associated with the output device, on each data layer of the output image; and

conforming at the processor the output image into a form acceptable for rendering by the output engine.

29. The method of claim 28 comprising rasterizing content that includes at least part of a text or graphics information.

30. The method of claim 28 comprising rasterizing content into raster-form layers that each include one or more attributes that differentiate it from other layers, the one or more attributes including one or more of resolution, color space, output size, bit depth, and rendering intent.

31. The method of claim 28 comprising rasterizing content into raster-form data layers each associated with segmentation information that includes an association with one or more of a background and a foreground, and a luminance and a chrominance.

32.   The method of claim 28 in which the segmented information includes an association with one or more of text, graphics, image, video, and audio.

33.   The method of claim 28 comprising performing image processing operations that include one or more of a compression, decompression, segmentation, de-segmentation, storing, retrieving, color correction, color management, scaling, an interpolation, color space conversion, encryption, digital watermarking, and halftoning.

34.   The method of claim 28 further comprising transmitting the output image to the processor with short-range wireless communication.